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New Shipping Season Starts

The 1952-1953 shipping season for Florida grapefruit is now on the way. First reported picking of grapefruit was on September 15, and first shipments rolled northward on September 19. Neither shipping nor picking operations are as yet on an extensive plane, since only a small percentage of extremely early bloom fruit is sufficiently advanced to pass the maturity tests.

First shipments were made from the Winter Haven section and consisted of Pinks and Duncans, the former commanding a price of $6 FOB, and the latter running from $4 to $4.50 per box. At this writing, prices received on the Northern markets are unavailable.

While not too optimistic, growers generally are looking for a better financial return for their fruit than was experienced last year. With fruit of excellent quality and favorable appearance and with ready cash in the hands of buyers, growers believe that prices will be maintained at a higher level than last season.

Reports of field men indicate that both oranges and tangerines are sizing up well with indications that the quality of these crops will command consumer approval.

All told, growers are entering the new season with much brighter prospects, certainly with much brighter anticipations, than a year ago.

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Successful Shipping Point Market Needs Daily Volume

Vol. 33, No. 10 Bartow, Florida October, 1952

XUM

What Your University of Florida Agricultural Experiment Stations Mean to You

FLORIDA SWEET CORN

From Almost Nothing to an $8,000,000 a Year Crop

IN LESS THAN 10 YEARS

Not very long ago the idea of sweet corn as a Florida money crop was good only for laughs. Production was almost nonexistent, there were no known dependable varieties, and budworms and earworms liked it so well that they left none fit for humans to eat. Then the University of Florida Agricultural Experiment Stations at Gainesville and Bradenton went to work.

Carefully, but with amazing speed, considering the problems, the Experiment Stations tested more than 100 varieties and found that the hybrids, Golden Cross Bantam and Ioana, were most suitable for Florida.

Right then, sweet corn as a money crop looked promising but actually wasn't. Further work by the University agricultural scientists revealed that sweet corn had to be treated as a vegetable, not a field crop. Sweet corn needs three to four times as much fertilizer as field corn.

At first budworms and earworms were a discouraging scourge. Then DDT became available and the worms were routed.

But still another problem arose: sweet corn deteriorated rapidly. Pre-cooling within the first four hours and shipping at 40-degree temperature brought the solution.

And here's how Florida farmers profited from the fine work of the devoted, dedicated scientists of the University of Florida's Agricultural Experiment Stations:

By 1947-48 the Florida sweet corn crop was important enough to be reported by the USDA Crop Reporting Board as worth $1,320,000. Within three years the value of the crop had increased to more than $8,000,000.

And this is just one chapter in the enthralling story of how your University of Florida Agricultural Experiment Stations' scientists work for you.

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Citrus Insect Control For October, 1952...

W. L. THOMPSON AND R. M. PRATT*
CITRUS EXPERIMENT STATION,
LAKE ALFRED, FLORIDA

The average infestations of both red and purple scales have been declining for several weeks and are considerably lower than they were a year ago, but some groves are still heavily infested at this time. Serious damage to both trees and fruit can result from fall scale infestations, so care should be taken to maintain good control. However, at this time there are no indications of a heavy general fall infestation of red scale such as occurred last year.

There has been a small increase in purple mite activity during the last month, so while population levels are generally low, there are some heavy infestations, and a general build-up may start at any time, particularly if the weather becomes dryer.

Rust mite activity has been increasing throughout the summer, and the average infestation is now very high, especially on fruit. There is at present no indication of when a general reduction may occur. During the fall months there is usually a more rapid increase on the leaves than on the fruit, so both leaves and fruit should be inspected frequently, and control measures should be applied promptly when needed, to avoid damage to fruit and loss of leaves.

Spray Programs

While the general levels of purple and red scale are fairly low, there are some individual groves that should be sprayed. This is particularly true where no scalicide has been applied since May. Attention should be paid to purple and chaff scale infestations on early varieties of fruit that are to be degreened. The area around a living purple and chaff scale on fruit does not color or degreen and the green spots are a grade lowering factor.

Scale infestations that develop in the fall of the year are somewhat of a problem. Parathion is now recommended for the control of scale during the fall and winter months. However, it is not always practical for some operators to use parathion and an oil emulsion is the only other effective scalicide. Most growers are aware that late summer and fall oil sprays reduce solids and retard degreening but, as stated, it may not be practical for them to use parathion. If such is the case, the infested grove should be sprayed with oil during early October regardless of the adverse effect on solids and degreening. Unchecked scale infestations may cause a heavy drop of leaves and fruit, and as a result, the trees are in a weakened condition. Trees weakened from a scale infestation are more susceptible to cold weather than vigorous trees. Late October, November and December oil sprays sometimes prevent a normal amounts of bloom the next year, so for those reasons, if oil is to be used, it should be applied early in October.

During October and continuing throughout the fall and winter months it is a good idea to check for purple mite infestations at the same time rust mite inspections are being made. Even though only a light infestation of purple mites may exist, a combined spray to control rust mites and purple mites may save an application in November or December.

Scale Control: Parathion is recommended for scale control and oil should be used only where it is not practical to use parathion. For light infestations use one pound of parathion per 100 gallons and 1-2/3 pounds for medium to heavy infestations. Add 6 to 8 pounds of wettable sulfur if there is a light infestation of rust mites. Either DN 111 or Ovotran can be added for purple mite control.

Purple Mite Control: Where purple mites are present start control measures before a heavy infestation develops. To obtain the maximum period of control and prevent leaf drop, the mites should be controlled while there is a light infestation. Use Ovotran at 1-1/4 pounds or, if the temperature is not above 88°, DN 111 at 1-1/4 pounds per 100 gallons can be used. Wettable sulfur can be used with either of these materials.

Rust Mite Control: Inspections for rust mites should be made about every two weeks at this time of the year because the mites are increasing very rapidly. Use either wettable sulfur or dusting sulfur. Have the tractor move very slowly if either a mechanical sprayer or a duster is used to apply the sulfur, because the foliage is compact and difficult to penetrate when a mature crop of fruit is on the trees.

Timely Suggestions: Be sure to cover the tops of the trees thoroughly with either sprays or dusts. The time of the year is near when heavy infestations of purple mites and rust mites are found on tree tops.

For more detailed information refer to the 1952 "Better Fruit Program" or consult the Citrus Experiment Station at Lake Alfred or Fort Pierce.

*Written September 22, 1952. Reports of surveys by Harold Holtsberg, Cocoa; J. W. Davis, Tavares; K. G. Townsend, Tampa; J. B. Weeks, Avon Park; and T. B. Hallam, Lake Alfred.

SNOW CROP ANNOUNCES NEW PARTICIPATION PLAN

With plans to increase its production of frozen orange juice concentrates by at least 25 percent for the 1952-53 season, the announcement several days ago of a new "participation plan" for growers has brought comment and reaction from all over the citrus belt, according to Latt Maxcy, vice president of the firm.

The new plan, differing from those in operation last season which based initial cash payments to growers on the solids content of the fruit, will give producers an immediate return of a sum equal to 80 percent of the then-current cash price for oranges with the growers to participate in the profits from the sale of juice on the basis of the juice yield of their particular crops.

Maxcy said that Florida citrus growers are gradually coming to the realization that in order to expand the outlets for their fruit they must participate, to a certain extent, in the financing of the deal and not expect the concentrators to take the entire risk of marketing as has been the case in the past.

Inquiries as to the details of the new participation plan outlined by Snow Crop coming into the Auburndale offices according to J. M. Sample, general manager, indicate that there is a wide grower interest in building new markets and outlets.

XUM

Crop Outlook Good; Efficiency Planning Required For Success

BY SPUDS JOHNSON

The prediction of the Florida Agricultural Outlook Committee that the demand for Florida crops in 1952-53 will be somewhat stronger than it was in 1951-52 is encouraging to farmers. It also is of timely significance to farmers who are putting in fall crops and who have been seeking information that would help them in their decisions on acreage.

The committee, however, does not recommend any marked increases in production of most crops, and, with some crops such as tomatoes, recommends slight decreases from last season's production. While the group feels that farmers should enjoy slightly stronger demands for most crops in 1952-53, it also thinks that all farmers will do well to consider the prospects for each crop and plant accordingly. Labor, which is almost certain to be short in the new season, is a very important factor, and every farmer should give careful consideration to it in his crop plans.

Reasons for the committee's prediction of somewhat stronger demand for Florida crops in 1952-53 are the increasing rate of spending for defense and new industrial facilities, increasing population of the country and the state (Florida rate now double the national rate), and increasing wage rates and employment.

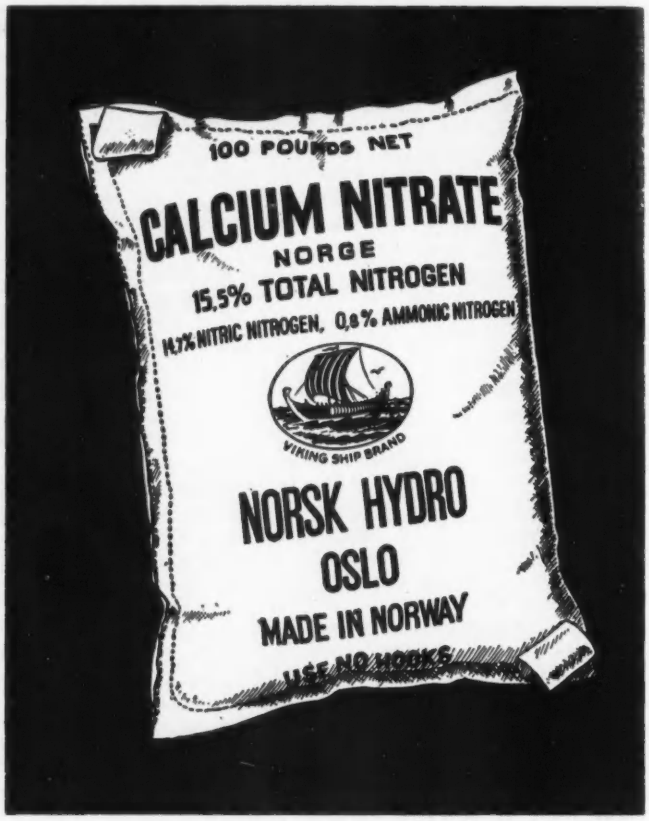
Population increases, the committee points out, mean more consumers for Florida crops, while increasing wage rates and employment will provide consumers with as much or more money to buy crops from the Sunshine State. Florida demand for such deficit crops as eggs, poultry, and milk is expected to continue strong.

Farming will require all the ingenuity, ability, and efficiency at the farmer's command if he is to make as much or a little more from his crops in 1952-53, however. His share of the consumer's dollar probably will be a little smaller and some of his costs will be higher, but he may equal or exceed his returns of 1951-52 by careful planning, efficiency, and by selling more of his crops.

The outlook committee thinks that 1952-1953 will be a slightly better year for Florida farmers than 1951-52, but it also emphasizes that good, careful, efficient farming will be necessary for success. Wise farmers will learn as much as possible about the outlook for their crops and then follow the most efficient program they can devise.

ASSISTANTS NAMED IN GIRLS' 4-H AND HOME DEMONSTRATION WORK

Miss Bronna Mae Elkins has been named assistant state girls' 4-H club agent and Mrs. Marjorie B. Gregory and Miss Zenna Cox have been appointed assistant home demonstration agents, it has recently been announced by Miss Anna Mae Sikes, state home demonstration agent with the Agricultural Extension Service.



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Problems In Developing A Balanced Supply Program For Florida Citrus

J. WAYNE REITZ

The history of the Florida citrus industry is replete with efforts and desires of grower organizations to control supplies, especially during periods of low prices. Many of the programs advocated and adopted were far broader than to meet the problem of excessive supplies, but in practically every major effort to minimize market problems the question of controlling the movement of a crop or of providing some means to dispose of surpluses has been one of the objectives—although it may not have been boldly stated.

The first major attempt was in 1909 when the Florida Citrus Exchange was organized. To be sure, the objective of this organization was to do a better overall job of marketing, including the reduction of marketing costs, but implicit in it was the desire to control a sufficient volume of the tonnage in order that a more orderly movement of market supplies could be accomplished. However successful the Exchange has been in selling and distributing a portion of the Florida crop, it has never controlled more than 38 per cent of the tonnage at any one time. Seeking to bring more coordination and orderliness in marketing, the Fruitman's Club was formed in 1925. This group soon realized that it too was inadequate to cope with the problem. However, out of this effort the Florida Citrus Growers Clearing House Association came into being and operated from 1928 to 1933. While it did not provide for surplus removal, it did carry on a proration program along with other activities, such as advertising and sales promotion, and the providing of statistical and market information. During a period of declining prices, this effort failed because too much was expected of it with the tools at hand. Next came recourse to marketing agreements under recently enacted federal law. Attempts at volume proration failed, but other efforts culminated in 1939 with the present marketing agreement which provides only for grade and size regulations, and shipping holidays on fresh fruit moving in interstate commerce.

More recently Florida Citrus Mutual was formed to accomplish certain objectives sought by growers. The objectives and powers of this organization are adequate for performing outstanding service to the industry. Because of the basic organization of the industry and for lack of proper tools, such as are needed for equitably enforcing control of supplies, Mutual has not been able to carry out effectively some of its objectives. It is apparent, however, that through this great growers organization producers are expressing anew their desire to promote and develop a program for adjusting supplies to conform with reasonable price objectives.

The problems of developing and operating such programs are still with us. Before we can consider some of these problems, it may be well to outline briefly various types of programs.

One which is still the favorite is that of allowing economic forces to bring about the necessary adjustments. This fits neatly into a concept of free competition. It is a very painful one, however, because the need to date has not been to bring about long term adjustments in supply. Rather the need has been for short term adjustments which economic forces do not correct readily in the case of tree crops, where the annual production cannot be quickly altered. We are not like the apple industry,

1. Paper presented by J. Wayne Reitz, Provost for Agriculture, University of Florida, at the Citrus Institute, Camp McQuarrie, August 21, 1952.

whose adjustments in supply have been made over 25-year cycles. If there is a cyclical fluctuation in the production pattern of citrus, it certainly has not been measured. Thus with a tree crop, for which the long term demand for its product has been upward, the argument to allow economic forces to bring about adjustments in supply is considered by some, and rightfully so, as being unrealistic in meeting some of the short term conditions of excessive supplies. When basic long-term adjustments are called for, then reliance must be on the free play of economic forces. We may be in that position now for certain types of grapefruit.

Of course, some will say that to allow the free play of economic forces to bring about short term adjustments is not a program. I would merely contend that as long as an industry is operating in this way, we could well call it a program, although it is not a so-called action program.

The second type of a supply control program which might be mentioned is our federal marketing agreement which provides for limiting the movement to certain grades and sizes of fresh fruit in interstate commerce. Basically, this is not a supply program, although inherent in many of the regulations is an attempt to withhold supplies from the fresh fruit market. Since it has no control over fruit for processing, it has little effect in bringing about an over-all balance in supply. The fruit eliminated from fresh channels finds its way into the market in the form of a processed product, and becomes competitive with fresh fruit. In our marketing of fresh fruit, the grade and size regulations under the marketing agreement have brought about real improvement; however, this program does not meet the requirements for balancing total supply with total demand, and we should recognize it as such.

A third type of program to control supplies comes under the heading of volume proration. There are those who maintain that the road to price stability is through volume proration and that alone. A common expression is to say that we need a marketing agreement to keep the 51st car out of a 50-car market. Here the reasoning is that by more orderly marketing, we can sell more citrus, because wholesalers and retailers will have confidence in our price structure and will buy and push our products more vigorously. There is a real merit to this argument, but as we shall see, volume proration, standing alone, does not solve the basic problem. This leads us to the fourth type of program which must go beyond volume proration.

For want of a better term, I shall call the fourth type an all-inclusive program for bringing about a balance of supply with demand at any given time and on a seasonal basis. The objective of such a program would be to do collectively for 15,000 growers what would normally be done if the entire citrus crop were owned by one individual or firm. Actually, what we are talking about is the development of mechanics whereby equity may be obtained among growers in seeking a monopolistic situation. As I see it, such a program would include volume proration or allocation of the crop to various uses and in addition would provide for diverting surpluses into non-competitive channels. This would appear to be the objective which many growers are seeking, but all too often they are not willing to face the necessity of doing certain things if such a program is to succeed. That leads us into my topic for the morning, namely, problems and considerations in developing a balanced supply program.

Let us divorce ourselves from the mechanics of a program and look squarely at some of the basic issues. In my judgment, the basic issue is one of a conflict in economic philosophies. There are those who contend, and with a great deal of merit, that in administering such a program, the growth of the citrus industry would be stymied because of the tendency to seek a higher price than sound economic judgment would justify. In fact, some will go so far as to argue that low prices in short periods have been an important factor in stimulating consumption and that such established patterns of consumption have later resulted in great prosperity for the industry. The disastrously low prices of grapefruit juice in the late thirties is cited as an example. Fear is also expressed that attention would be diverted to operating a balanced supply program rather than to the all-important objective of expanding outlets. Now you may say this is not a problem, but in my judgment it is a real one, since it is philosophic in nature. It arises from the common observation that at any given time the tendency of administrative groups dealing with prices is to squeeze out of the market a little more than real wisdom would dictate.

I am willing to assume, however, that this industry has attained sufficient maturity and has or can obtain sufficient information to develop a realistic price objective in administering a balanced supply program. I am talking about getting from 15 to 40 cents a box more for oranges than might otherwise be the case in periods of excessive supply—not $1.50 on the tree as some seem to believe we should have regardless of any adverse supply and demand situation.

If the industry is willing to face this economic philosophy hurdle, what, then, are some of the problems we face in developing a complete program to handle supplies. First, is that legislative authority for doing the complete job does not exist. For example, at the federal level the Agricultural Marketing Act of 1937, under which the present grade and size marketing agreement operates, does not grant the authority for controlling supply of fruit going to processors. Until this act is amended, nothing can be done to plug all of the gaps through the use of the federal police power. As you are aware the legislative committee of Florida Citrus Mutual is giving much study to developing state legislation which would be broad enough, it is hoped, to permit the development of a complete program.

In aproaching such legislation either at the federal or state level, questions are always raised as to what can and can't be done. The enabling legislation should be broad and should permit considerable flexibility in the development of programs which fit the needs of a particular industry. Too often we are unduly alarmed over the latitude of legislative authority and much of this alarm stems from the fact that we are not aware of the many safeguards which are provided before an actual program can become effective. I think it would be well to point out the steps that an industry must take in order to develop a marketing agreement program under existing or amended legislative authority.

Assuming we go to the federal route, a proposed agreement must

be submitted to the Secretary of Agriculture by a substantial or responsible segment of the industry. If on examination by the Secretary it is determined that the plan appears to be economically sound and administratively feasible, a public hearing is called. At such a hearing all who desire to testify on the merits or demerits of the proposed program have an opporunity to do so. Following the hearing the Secretary's office studies the record and if the evidence justifies an agreement in keeping with the original proposal, he calls a referendum among growers. In order to have further consideration the proposal has to be acceptable to two-thirds of the growers voting. If the reaction of growers is favorable then the proposed agreement is submitted to packers and processors and 51 per cent of this segment of the industry must sign the agreement before it becomes effective. Even when made effective the development of week to week, or seasonal, regulations remains in the hands of an administrative committee chosen by growers. In brief, the above steps are those which have been followed in getting our grade and size marketing agreement in effect and in taking care of the amendments, of which there have been two or three. With such safeguards and with the administration in the hands of growers—except that the Secretary would not allow institution of too stringent regulations—it seems to me that an industry need not be too concerned over the scope of legislative authority which may exist just as long as that authority permits adequate flexibility in developing sound programs.

Let us now assume that proper legislative authority exists, be it federal or state. What then are some of the remaining problems in developing a balanced supply program? In attempting to answer this question, I am not going to spell out the details of a program, for frankly I am not prepared to do so. We shall assume, as has been mentioned, that there will be volume proration in fresh fruit movement, allocation of supplies to processors, and when needed provision for removing surpluses from existing trade channels. The first two phases of such a program cannot be met without insuring to all growers that some method will be available for equitably handling any portion of the crop that cannot be marketed in regular channels. This fact needs to be clearly recognized even though we would hope that the mechanics provided for eliminating surpluses would never have to be used. If such provision is not made, the individual grower will be in constant fear that a portion, or all, of his crop might not move. This fear is based on the fact that implicit in any volume proration or allocation system for either fresh or processed fruit is the possibility that in withholding supplies at any given time the full crop may not be marketed. Because of this well justified fear the problems of enforcement would be all too difficult on any type of allocation program without provision for surplus removal, unless the proration is carried back to each individual grove. In that event each grower would have a per cent of his crop remaining on the tree at the close of the marketing season in years of surplus. Even here, to check on the details of such a means of removing surplus is administratively very complicated, although it would accomplish the purpose of assuring equity among growers.

If we are willing to subscribe to the philosophy of a complete balanced supply program and recognize the need for dealing with the surplus, there is still one great problem confronting the industry. It is one of organization. As presently organized, only about half of the fresh fruit and less than half of the processed moves through cooperatives and grower shippers. This is too small a proportion of the crop committed to a definite marketing agency, at the time the season opens, for effective administration of a supply control program. For those who would seek a balanced supply program, this problem is one of the first order, because it calls for a basic decision on the part of many growers; namely, are the benefits of a balanced supply program greater than the benefits of being able to pit one cash buyer against another at any time one chooses, or has an opportunity to do so? This does not mean that the cash buyer need be eliminated entirely, nor that the shipper or processor who handles fruit on grower account no longer has a place in the industry. It does mean, however, that once the season is started, growers would have committed themselves as to who would handle their fruit for that season and there would not be the opportunity to shop for cash buyers. This may well be a privilege which growers are not willing to forego. If they are not willing to forego it, then time and effort should not be wasted in clamoring for a program of balanced supply of the type indicated.

Such then are some of the issues and problems confronting us if we are to handle our supply program as many desire. One of the great weaknesses, in our thinking on these problems, is that we want to obtain certain objectives, but in seeking those objectives we are not willing to take the necessary steps to accomplish them. I am not quarrelling with this hesitancy on the part of many growers. I am merely pleading that we should be realistic enough to face the issues that confront us and not indulge in such wishful thinking as to believe that some very simple and painless method for coping with problems of supply can be evolved.

Finally, while I have directed my attention to problems of supply, let me emphasize that whatever may be done in this category must remain subservient to the greater and more fruitful objective of constantly improving our merchandising efforts to bring about expanded outlets for Florida citrus.

CHLORDANE HELPFUL IN CONTROLLING "PALMETTO BUGS," KUITERE SAYS

"Palmetto bugs" which prove troublesome in many yards and buildings in Florida may be fairly well controlled with chlordane, according to Dr. Louis C. Kuitert, entomologist with the University of Florida Agricultural Experiment Stations.

The pests, which actually are wood roaches, have been called "palmetto bugs" because they commonly breed in protected places in the crowns of palms and also in refuse under palms.

Control has proven somewhat difficult, but an application of 5 percent chlordane dust to the palms and the ground around the palms has been found to be fairly effective against the pests, Dr. Kuitert says. If the roaches invade the home, applications of 2 percent chlordane in refined kerosene to floors and other surfaces at openings will help to curb them.

XUM

Methods of Measuring Soil Moisture . . .

LUTHER C. HAMMOND
ASST. SOIL PHYSICIST, FLA. AGRI. EXP. STA., AT CITRUS INSTITUTE, CAMP McQUARRIE

Atomic energy has been harnessed to measure soil moisture (5): This is one of the latest developments in a long quest for satisfactory methods of soil moisture measurement for irrigation control.

The moisture level in the soil surrounding the plant roots determines when irrigation water should be applied. The big problem in Florida, is the determination of the soil moisture content accurately and economically. The purpose of this paper is to review methods of soil moisture measurement which are adapted or show promise of being adapted to Florida soils.

First, it should be emphasized that most of the moisture measuring devices have the serious limitation of indicating the moisture only in a small area of soil in the immediate vicinity of the device. Thus, large numbers of permanently installed instruments are needed to give a representative idea of soil moisture conditions. In the case of the non-wettable soil area under citrus trees, the problem of following soil moisture conditions in a block of trees becomes extremely difficult.

The oldest and most reliable method of soil moisture measurement is by oven-drying representative soil samples. The samples are weighed, dryed in an oven at 105 degrees centigrade and reweighed. The percentage of moisture expressed on the dry weight basis is then calculated. Obviously, this method is extremely laborious and time consuming.

Various chemical methods have been used in an attempt to circumvent the disadvantage of the oven-drying procedure. The most notable of these attempts, burning the water from the soil with alcohol and weighing in the field, has been used by Sites (10) in an irrigation experiment at Lake Alfred. The method was successful for the test control of moisture in the experiment. However, it is doubtful if the average grower would find this method very useful.

Two other rather recently developed methods to determine the soil moisture percentage directly in the field are the air and water picnometer methods (6, 8). These methods require sensitive weighing devices suitable for field use. Such devices are rather expensive. In our work with the water picnometer we have been trying unsuccessfully, thus far, to find or develop a simple, inexpensive weighing device. The Russell type air picnometer was designed for soil volume weight, air volume, and moisture determinations in the field. The instrument consists of an air-tight chamber, a volume-changing mechanism, and a mercury manometer for indicating pressure. To determine the amount of moisture in a soil sample, one places a weighed quantity of the soil in the air-tight compartment and reduces the volume of the picnometer system by a standard amount, utilizing the volume-changing mechanism. The resultant pressure in the air-tight chamber is indicated on the mercury manometer.

The manometer scale can be calibrated to read moisture percentage directly or calculations may be made from suitable formulas. The results obtained with the Russell air picnometer in a field test are given in Table 1. The variability in the picnometer moisture values is quite high, but the average percentage compares favorably with the oven-dry average. The principle of the air picnometer is sound, but further work is needed to make the instrument more suitable for field use.

(Soil moisture data obtained in the laboratory with the various sizes of water picnometers are given in Table 2.)

If the weighing problem were solved, it is believed that a grower could place the water picnometer and a jug of water on a jeep and travel through a grove taking moisture readings fairly rapidly. To determine the moisture content with this instrument add a representative soil sample to the empty flask until a certain weight is recorded. Add water to the flask, stir, and then add more water to the calibration mark on the flask. The weighing device will, then, indicate the moisture percentage directly if the instrument is calibrated for a particular soil. For practical purposes the water picnometer can be calibrated to show only the relative amounts of soil water between field capacity and permanent wilting percentage. The moisture between these two so-called moisture constants represents that which is available to the plant under field conditions. The soil moisture content as determined by all the methods so far discussed must be interpreted in terms of the field capacity and the permanent wilting percentage to be of value for irrigation control.

Various indirect methods of measuring soil moisture have been used successfully for moisture control purposes in experimental work. One does not need to know the

Table 1. Moisture content of Lakeland fine sand; Russell air picnometer vs. oven drying.

Sample No.	Moisture Content	
	Air Picnometer	Oven-dry
	%	%
1a	4.27	4.8
1b	1.92	4.4
1c	4.05	4.0
2a	5.15	4.4
2b	3.70	4.6
2c	2.18	4.0
3a	5.75	4.5
3b	5.26	4.9
3c	4.9	3.9
Av.	4.13	4.4

exact percentage of water in the soil as long as he has a relative idea of how close the soil moisture is to the permanent wilting point and how much water will be required to bring the soil moisture back to the field capacity. The soil moisture tensiometer is probably the most useful indirect moisture-indicating instrument for sandy soils (7).

The instrument consists of a porous ceramic cup connected to a suction indicating device. When the cup is filled with water and placed in contact with the soil, the fluctuations in the moisture content of the soil are registered on a suction device. The dryer the soil, the higher the suction reading. The instrument operates in the high range of soil moisture. However, due to the nature of the forces holding water in our sandy soils, the tensiometer remains operative over 75 to 90 per cent of the soil moisture between field capacity and the wilting percentage (Table 3). This is the range in which we are most interested. Therefore, with proper location of the cup, one should be able to irrigate any crop at their right time. The sandy non-wettable soil under citrus trees gives us more difficulty than others as far as proper cup location is concerned. A certain amount of skill is needed to keep the tensiometer in operation. However, with supervised installation and maintenance, growers should find this instrument excellent for irrigation control purposes in Florida.

Several electrical soil moisture measuring methods, which are also indirect, are now in rather common use in various parts of the country (1, 2, 3). The electrical resistance method has been developed to the highest degree. The resistance units, which are permanently located in the soil, consist of two electrodes embedded in either plaster of paris, fiberglass or nylon material. When these units or blocks are in contact with the soil, the material surrounding the lectrodes takes in or gives up moisture as the water content of the soil changes. The electrical resistance between the embedded electrodes depends upon the quantity of water in the units. Resistance readings are taken by connecting a resistance meter to the electrical leads above the soil. Temperature variations and salt concentrations in the soil solution affect the results obtained by this method. In tests made so far on our sandy soils, plaster of paris units have been rather erratic and have failed to give adequate warning of low soil moisture conditions. They are best adapted to the dryer range of soil moisture and thus do not become sensitive to moisture changes until the sandy soils are dangerously close to the permanent wilting point. The fiber glass and nylon units have only recently been placed under tests in Florida. Theoretically, they should be more suitable on sands than the plaster of paris units because they are more sensitive in the wet range of soil moisture. Tests are being made on all three types of units.

Two other electrical methods, capacitance of condenser plates located in the soil and rate of heat loss from an electrically heated unit in the soil, are currently in the development stage (4, 9, 11). They show considerable promise from a theoretical standpoint but may prove to be rather expensive.

One of the newest methods of measuring soil moisture utilizes our recent advancements in the peacetime use of atomic energy. The atom has been used successfully to measure the moisture content of soils (5). The method has some big advantages. It covers the entire range of soil moisture and is independent of temperature, soil texture, composition, compaction, or salt concentration. The results are obtained immediately and as the soil drys out a larger and larger volume of soil is included in the measurement. The big disadvantages at the present time are the health hazards and the expensive equipment needed.

In summary, the greatest obstacle to the successful use of soil moisture measuring devices in irrigation control is the variable nature of the soil. Those methods of moisture measurement which cover the desired soil moisture range between field capacity and permanent wilting percentage and which can give fairly representative value for the soil moisture conditions in the root zone of the plant over the area in question, are the methods for which all of us are searching. To accomplish this with some devices, the expense, labor and time involved make their use prohibitive to the average grower. Therefore, for the present at least, the oven-drying method and the tensiometer seem most suitable for soil moisture measurement in sandy Florida soils. Mechanical methods such as the picnometer and various electrical methods are worthy of further investigation.

(Continued on Page 11)

Table 2. Moisture determination with the water picnometer. (Arredondo f.s.)

Vol. of picnometer	Weight of soil	Moisture content	
		Water picnometer	Oven-dry
ml.	gm.	%	%
1117.1	300	9.80 10.81	9.80
1117.1	500	10.20 10.00	9.90
272.4	75	11.00 9.20	11.53
272.4	75	9.70 8.40	9.98
524.8	150	9.10 10.80	9.72
70.0	20	10.30 8.70	10.13

Table 3. The moisture content of Arrendondo fine sand at various soil moisture tensions as determined with the tensiometer.

Moisture content	Tension-cm. H20 (tensiometer reading)
%	
7.8*	80-100
5.2	200
3.1	800
2.1**	

*Field Capacity.
**Permanent wilting percentage. The tensiometer goes out of operation at a reading of about 850 cm. of water and before soil dries to the field capacity.

Growers And Shippers League Active In Adjusting Rates

Numerous freight and traffic problems confront the citrus and vegetable industries of Florida as the start of the new shipping season nears, Gordon Stedman, Secretary-Manager of the Growers & Shippers League of Florida, said here today. The League has a full schedule ahead, handling these problems for the growers and shippers of the State. He summarized the situation as follows:

There has been a big increase in the demand for Florida's citrus fruits in states served by the Southwestern and Western Trunk Line railroads. The question of a revision in rates on fresh citrus into this area has been subject of discussion with Florida and Western Trunk Line railroads for well over a year. Florida's "origin" lines are very anxious to revise these rates so they can secure a portion of this valuable business into Texas, Oklahoma, Arkansas, Missouri, Nebraska, North and South Dakota, Iowa, and Minnesota. Stedman reveals that during last season in the southwest 97% of last season's movement was handled by truck, and 68% of the Western Trunk Line shipments were by truck. Citrus volume into this territory increased substantially this past season and it is expected 1952-53 shipments will be even greater. Stedman figures that around a 25 to 30% reduction in rail rates will have to be worked out if rail carriers are to get this traffic. The League's Executive Committee has authorized the League to take a formal complaint case to the Inter-State Commerce Commission to secure a revision of these rates. Officials of the Southwestern railroads are requesting a conference and a meeting has been set for September 18th in Chicago on this subject.

Unloading charges at New York and Philadelphia markets were reduced, effective last July 3, to the extent that Florida shippers were saved around $25.00 per car. The League is now trying to save the citrus industry another $25.00 per car. A conference at Washington, D. C., September 11, in the offices of the United Fresh Fruit and Vegetable Association, will see counsels of the fresh fruit and vegetable industries discussing the filing of a complaint with the I.C.C. relative to present charges. "We are still of the opinion that no charge should be made and Mr. M. W. Wells, the League's Counsel, will be in attendance at the Washington conference," Stedman said. Attorney Wells has already drafted the complaint for the interested parties which will be billed in connection with charges assessed at New York City.

The Perishable Protective Tariff which applies to shipments partially unloaded in transit is giving concern. For several years an attempt has been made to amend a rule which provides that ice to replensh bunkers will be included in the standard refrigeration charges if partial unloading is completed within six hours from the time of arrival in the terminal train yard serving the stop-off point. However, if cars are held more than six hours ice to replenish bunkers will be billed for in addition to the standard refrigeration charge. These extra charges range from $20 to $75 per car, Stedman said. Shipments of frozen citrus concentrate are assessed heavy charges under the rule as it now reads because the six hour period has expired before the consignee has been able to unload the car and return it to the railroad. The League has suggested several different amendments to the rule which have been disapproved, so now the League is attempting to have this rule amended so that the six hour time begins to run from the time the cars are placed for unloading on team or private tracks. A hearing has been set before the National Perishable Freight Committee in Chicago, Sept. 17.

Truck rates are also keeping the League busy. Effective Sept. 5 motor truck lines published a flat charge of $15 per stop on shipments of frozen citrus concentrate stopped for partial unloading. The League's Advisory Committee declares this charge is too high and has suggested a flat charge of $12. Truck operators and members of the League's committee will discuss this subject in Atlanta, Sept. 15.

Truck rates on frozen citrus concentrate will come up for discussion in the offices of Southern Motor Carriers Rate Conference, in Atlanta, Sept. 15. Southern Motors Carriers Rate Conference recently published increased rates, effective Sept. 5, on frozen citrus concentrates into the different territories, which new rates are not acceptable to the Florida concentrate industry. Stedman and Haile, officials of the League, and several members of the Florida Canners Association, Advisory Committee will attend the Atlanta conference in an effort to improve this rather unreasonable rate situation.

Express shipments of Florida citrus fruits are requiring services of the League, since the Railroad Express Agency published a new rule which would limit the agency's liability as to protecting shipments during the Winter. This rule was to have become effective Aug. 2, however the League and other interested parties filed petitions for suspension and this suspension was granted by the Interstate Commerce Commission. The proceeding will come up for hearing at Washington on October 21.

NEW FUNGICIDE IN PRODUCTION

Mr. F. W. Hatch, Manager, Julius Hyman & Company Division, Shell Chemical Corporation, Denver, Colorado, recently announced that the soil fungicide which has been widely tested under the code name CBP-55 will be in commercial production during the next 4 months at the company's Denver plant.

CBP-55 has demonstrated outstanding effectiveness as a soil fungicide in control of soil pathogens in tobacco seed beds and for control of root-rots of strawberries and nursery stock. The production schedule assures the availability of CBP-55 for large scale spring treatments. Pilot plant stocks are adequate for fall supplies.

Successful Shipping Point Market Needs Daily Volume

Of the factors essential to the success of a shipping point fruit and vegetable market, one of the most important is an adequate daily volume of produce handled, according to a report on 85 such markets by the U. S. Department of Agriculture.

The report, based on a broad study by the Production and Marketing Administration and the Credit Administration of factors that make for success in such markets, points out that adequate daily volume is necessary to attract a sufficient number of buyers to provide demand and insure competition.

The smallest average daily volume handled on any of the 85 markets was 1.8 equivalent carloads, indicating that markets might not be expected to operate on a smaller average daily volume. The largest average daily volume among the 85 markets was 23.4 equivalent carloads.

In choosing shiping point fruit and vegetable markets to patronize, buyers give great weight to variations in daily volume, which are relatively less on the large markets. Although daily requirements of different buyers vary, the study showed that the number of buyers increases in direct ratio to the volume of fruits and vegetables offered for sale.

In 1948, the 85 markets for which data were available handled the equivalent of 61,261 carloads of fruits and vegetables. About 46 percent of the markets surveyed drew a sufficient number of buyers during the first season of operations to become competitive. Some markets required from 1 to 8 years to obtain adequate buyer competition. Others failed ever to become competitive.

Other factors affecting the success of such a market are the volume of production for market in the area served and the number of growers who sell on the market. An analysis of 77 markets in 17 states and of census data showed that roughly 20 percent of the vegetable growers and 45 percent of the fruit growers in the immediate areas served by the markets sold through them.

Nearly all of the markets operating at the time of the study were used by at least 10 percent of the growers within the immediate production area, but only a few markets were used by more than 50 percent of the growers. Slightly under half the markets were owned by the growers—operating as farmers' cooperatives.

More than 80 percent of the grower loads sold on shipping point markets originated within 15 miles of the market, the study showed. It was found that growers are reluctant to sell on markets more than 25 miles from their farms.

Other factors affecting the success of shipping point markets were found to be management, adequacy of land and facilities, cost of operation as reflected in fees charged, location of the market, method of selling used, and ownership of the market.

The study was made by the Marketing and Facilities Research Branch of PMA, in cooperation with the Cooperative Research and Service Division of FCA. A copy of the report, "Farmers' Produce Markets in the United States; Part III, Shipping Point Fruit and Vegetable Markets," may be obtained from the Office of Information Services, Production and Marketing Administration, U. S. Department of Agriculture, Washington 25, D. C. The research which is the basis for this report was conducted in part under the authority of the Agricultural Marketing Act of 1946.

NEW U. S. STANDARD IS ANNOUNCED FOR FLORIDA TANGERINES

The U. S. Department of Agriculture has announced new U. S. standards for grades for Florida tangerines.

The new standards, which will become effective October 18. 1952, are based upon extensive research and in general reflect the opinions of tangerine industry representatives. They differ from existing standards principally by providing a definition for diameter and maturity and by adding a U. S. No. 1 Russet grade. They also include other minor changes from existing standards, and a number of definitions have been re-worded for clarification.

METHODS OF MEASURING SOIL MOISTURE

(Continued from Page 9)

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COLUMBIA PROGRESSES IN SEED PRODUCTION, DRYING

Lake City, Fla. — Columbia county is showing much progress in producing grass and sweet yellow lupine seed, according to County Agent James N. Watson.

Six years ago there was only one combine and there were no drying plants in all the county. But now 42 combines — seven of which are self-propelled — and nine hay and seed drying plants are in the county.

This season the Columbia county drying plant dried and cleaned more than 160,000 pounds of Pensacola Bahia grass seed.

Wider Tire Rims No Help In Tractor Operation On Dry Sand

Contrary to the belief held generally by the owners of citrus groves on Florida's sandy grove lands, wider tire rims do not help in tractor operation on such lands. The following are excerpts from a paper delivered at SAE National Tractor Meeting in Milwaukee, on September 13, 1951.—Editor.

Excerpts From Paper by E. G. McKibben and I. F. Reed, Division of Farm Machinery, U. S. Department of Agriculture, Tillage Machinery Laboratory

Recent tests indicate no justification—in terms of improved drawbar pull or increased efficiency—for the use of rims wider than standard for tractor operation on dry sand. On the other hand, lowering tire inflation pressure will help, but caution should be exercised when carrying out this practice.

The tires used in this study were 14-26, 6-ply, for which the recommended rim width is 13 in. Two types of tread—button type R-3 and bar type R-1—mounted on four different rims (12, 14, 16, and 18 in.) were tested.

Tests were run with both types of tires at recommended inflation pressure of 12 psi and static load of 3120 lb. The button type tires were also tested at a reduced pressure of 8 psi with the static load of 3120 lb., and a reduced static load of 2460 lb.

The tests at 3120 lb. load and 8 psi inflation caused excessive wrinkling of the side walls. And this combination should be considered only for very short periods of extreme emergency operation. (This set of tests was made to obtain accurate information on the possible gain in draw-bar pull by lowering inflation pressure when operating in loose dry sand.)

It should be noted that the dynamic load on the tires is increased above the static load by the amount of so-called "weight-transfer" caused by the moment of the drawbar pull. For these tests the dynamic tire load was equal to the static load plus 0.2 times the drawbar pull.

Test Conditions and Procedure Described

Dry sand is one of the most difficult traction conditions encountered in the areas where wider rims are promoted locally. Therefore, a sand test plot, which analyzes 89, 2, and 9% sand, silt, and clay, respectively, was used.

Preparation of this plot was made by a cross tilling machine, equipped with cultivator shovels running 8 in. deep and a suspended soil-leveling bar. The machine covers the entire width of the test area, thus eliminating any tendency for differences in soil preparation across the plot.

The test plot was protected from rain and maintained in a dry state by cover cars. The dry, loose condition of the sand show typical tracks produced by the tests tires when operated at 75% travel reduction (slippage).

The actual testing operation on the tires was held at 3120 lb. by adding or removing weights from the tractor to compensate for differences in the weights of the rims. Inflation pressure was checked before each test track. Tractor engine speed was maintained at 1400 rpm, which gave a calculated tractor speed of 1.5 mph.

Travel distance for each revolution of the tire was obtained from a chart operated by a solid rubber-tired wheel running on the test-plot rail. Travel reduction was calculated from this travel distance on the basis of the travel distance for the same tire on the same soil, with the same inflation pressure and load, but without drawbar pull. Tests were run at 5, 15, 25, 35, 47½, 60, and 75% travel reduction.

Torque input was obtained by using an induction-type strain gage dynamometer in the hub of the test wheel. A Sanborn amplifier and recorder unit was used to measure and record the output from this dynamometer.

The drawbar pull was measured with an Emery hydraulic cell and a pressure recording unit.

Travel, torque, and drawbar chart recordings were synchronized by using magnetically-operated pens.

Data and Conclusions Reported

A 200 lb. increase in maximum drawbar pull, and about a 3% increase in work efficiency, were obtained by lowering tire inflation pressure from 12 to 8 psi. (Static tire load was not reduced.) However, it should be noted that the Tire and Rim Association does not recommend inflation pressures below 12 psi.

Four noteworthy conclusions can be drawn from the test results:

- There appears to be no justification for the use of rims wider than the standard 13-in. width for operation on dry sand—at least from the standpoint of drawbar pull and work efficiency at the given tire loads and inflation pressures.
- For operation on dry sand, travel reduction should be kept below 30% as both maximum efficiency and drawbar pull are obtained at lower values of slippage.
- For most efficient operation on dry sand, travel reduction should be kept below 20%.
- For maximum drawbar pull and efficiency when operating on dry sand, inflation pressure should be as low as possible without causing tire damage by excessive deflection, wrinkling of tire walls, or slippage of the tire on the rim.

The last three of these conclusions simply confirm the common experience of motorists, truck drivers, and tractor operators who have handled motor vehicles in sand.

(Paper on which this abridgment is based is available in full in multilithographed form from SAE Special Publications Department. Price: 25c to members, 50c to non-members.)

PROSPECTS GOOD

With vegetable planting operations well under way, prospects for another big farming year in Palm Beach County are good, County Agent M. U. Mounts reports.

PLANT QUARANTINE IS EXTENDED TO THE VIRGIN ISLANDS

Plant quarantine operations of the U. S. Department of Agriculture to safeguard the continental United States and its territories and districts from the entry of dangerous foreign insect pests and plants diseases, was extended to the Virgin Islands of the United States effective September 5, the Department anounced.

Two experienced inspectors of the Bureau of Entomology and Plant Quarantine have been transferred to the municipalities of St. Croix and St. Thomas, Virgin Islands.

Inspection of plant importations into the Virgin Islands has been previously handled by inspectors of these municipalities. This extension of Federal plant quarantine operations will give the Islands more adequate protection against introduction of injurious pests through the entry of infested or infected plant importations.

Quarantine amendments, effective September 5, will place the Virgin Islands under the long-existing quarantines restricting or prohibiting the importation into the United States of citrus nursery stock; other nursery stock, plants and seeds; citrus fruits; other fruits and vegetables; and cut flowers. The Virgin Islands have been excluded from that part of the quarantine restricting the entry of sweetpotatoes and yams, as the insects guarded against already are established in the Virgin Islands.

On the same date Federal operations in the Islands also will extend to enforcement of U. S. quarantines restricting or prohibiting the importation of avocado seed; sugarcane; corn and closely related plants; bamboo; and potatoes; as well as to enforcement of the regulations relating to plant material en route through the United States.

It is also anticipated, the Department said, that amendments will be effective in the near future which will bring the Virgin Islands under import restrictions on cotton and cotton products, and wheat and wheat products.

Similar action is contemplated for domestic quarantines in order to regulate where necessary the movement of plant material from the Virgin Islands to the continental United States.

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Reports Of Our Field Men . . .

PASCO AND E. HILLSBOROUGH
E. A. McCartney

This territory has had plenty of rain and new growth is much in evidence. Rust mite is showing up in most groves, but is being taken care of by dusting. Choppers and discs are working overtime due to the rains and early maturity of cover crops.

The fall application of fertilizer will start around Oct. 1, with the fertilizer deal getting in full swing from Oct. 15 to Nov. 1. There is generally a good crop set, but in some sections grapefruit is a little light. Early oranges are a little late in maturing, tangerines are about the same in volume as last year.

Vegetable growers are going ahead with the fall crop. There will be an increase in acreage this fall. Cattle pastures have been fertilized for fall grass and most pastures are looking very good at this time.

SOUTH POLK, HIGHLANDS, HARDEE, DeSOTO COUNTIES
C. R. Wingfield

We are still having spotted showers of rain that has kept us in fairly good condition as far as moisture is concerned. Citrus growers are beginning to think in terms of "fruit maturity," with some grapefruit being picked. If the rains will slacken perhaps it will pass more readily. Hamlin oranges are beginning to cut fairly well but have not reached maturity as yet.

Chopping, plowing and discing is about the extent of activity with the citrus growers, along with rust mite control. However, the vegetable growers are really in high gear in land preparation and planting.

SOUTHWEST FLORIDA
Eaves Allison

Citrus in this area is continuing to develop in the promise of top quality at picking time. Growers and shippers are expecting better prices this season and all indications are that they will not be disappointed. Insect pests are about as usual, but with the new insecticides and fungicides the problem of control nowadays is routine. Good rains periodically have kept up the soil moisture over this whole area.

Vegetable acreage in Ruskin-Palmetto-Bradenton is about the same as last year, with crop prospects rather better at this time. Fort Myers-Immokalee plantings seem to be greater than last year — probably as much as 50 to 60 per cent more acreage planted. Early rains in September have played havoc with first plantings there. Losses have been heavy to water damage.

Pasture land over the whole section looks good with the cattle in fine shape.

NORTH CENTRAL FLORIDA
V. E. Bourland

Weather is still hot with rain in spots, quite a bit of wilt in lots of groves, what rain we get is absorbed with the wind and heat. Lakes are very low, some are lower than I've ever seen. Fruit is not sizing as fast as it should most of groves have been chopped or cutlivated, quite a number of splits in lots of groves, some of the growers are using some fertilizer or Nitrate of Sola thinking it will help size up fruit .

Truck farmers in this section are setting cabbage and peppers, and a few planting fall cucumbers. Pastures are looking and holding up very good. and most cattle are in good shape, but the market is unsatisfactory to most of the cattlemen.

Packing houses and concentrate plants are being put in running order.

POLK AND HIGHLANDS COUNTIES
J. T. Griffiths and J. K. Enzor, Jr.

September 15 saw the first grapefruit picked in groves in Polk County and, of course, some of these were Lyonized groves. Some of this grapefruit packed better than 90 per cent and the trees were virtually cleaned. Picking slowed down as shipping requirements changed on September 22. It will probably be October before any oranges are ready in most parts of this area.

We have had an opportunity to check on the effectiveness of FERRO-GRENE where it has been used in experimental quantities. Results have been excellent and would indicate that a considerable volume should be used in the spring application of fertilizer.

So far red scale has not become a major problem this year, although there is some scattered about, particularly on grapefruit and Temples. Purple mites are beginning to show up in some groves and rust mites continue as a problem.

Some growers are running discs and plows and fall fertilization will be under way in October. Most of the county is beginning to get dry.

NORTH HILLSBOROUGH AND PINELLAS COUNTIES
J. A. Hoffman

Weather conditions have been good during the past month and most groves are showing a good new growth. Fruit is sizing up nicely for this time of the year. Growers are beginning to cultivate young groves and hoe out the young trees for the winter months ahead. Growers should also be on the lookout for rust mite during the next month.

Cattlemen are also busy preparing for the winter months ahead getting pastures in the best of condition and the storage of hay. Others are planning and preparing new lands for planting.

WEST CENTRAL FLORIDA
J. E. Mickler

The first tinges of Fall have been felt this past month, and it is most welcome. Fruit is just beginning to break color and grove owners are beginning to look forward to the early market.

In this section fruit is sizing nicely, being helped along by showers for the past month. While showers have been frequent there is still a need for more rain. Some groves have had to be dusted for mites, but most have been fortunate to have the rains keep them in check. Fruit in the surrounding groves are in good shape and most growers are looking forward to better prices. Next month will see the beginning of the fall fertilizer applications.

Data from the various cattle stations gives us definite proof that fall fertilizing of pastures pays off. And this fall should see the cattlemen going to that means of winter feeding in greater numbers.

XUM

ADVERTISEMENT — LYONS FERTILIZER COMPANY

Uncle Bill Says:

There seems to be a pretty general feelin' of optimism right now concernin' the outlook fer the comin' citrus season . . . 'course it's sort of a cautious optimism and they is a lot of "ifs" connected with the forecasts that's bein' made . . . but we're jist like the rest of the growers in believin' that things is goin' to be better this season than last.

They's a lot of things that influence prices durin' any season besides demand and supply . . . though everyone knows these factors has an enormous effect on the market . . . but the raisin' of high quality crops also has a heap to do with the prices you 'n me git fer our fruit and vegetables . . . and they jist ain't no short cut to producin' the very best fruit we can raise . . . everyone knows that in order to raise better than the run of the mill fruit your trees and crops has to be fertilized with the right sort of fertilizer, containin' the right kind and amount of plant food to do your crops the most good . . . then there's this business of takin' care of these pesky insects which, if they ain't controlled, can jist raise the very devil with your crops . . . then they's details sich as irrigatin' and cultivatin' that must be done to raise the fruit thet you 'n me like to eat . . . and to be able to offer on the market.

But this ain't no news to Florida growers . . . but like the gospel these facts is worth repeatin' from time to time!

But gittin' back to where we started we're optimistic over the outlook 'cause we got jist about the same size crop as we had last year . . . the demand for concentrate, single strength juice, fruit segments and all the other forms of citrus we didn't use to have a few years ago . . . all added to the still big fresh fruit market provides outlets for a heap of Florida's fine citrus.

And Florida vegetables jist can't be topped . . . here's hopin' the weather man gives us a break this year . . . if so, they'll be a real bumper crop of Florida vegetables on the market.

Citrus Trees With Scaly Bark Disease Hardest Hit By Freeze

Texas Farming and Citriculture carries the following statement by Carl Waibel of the Texas State Department of Agriculture on the damage to citrus trees in the great freeze in Texas a year ago;

After the 1949 freeze in Texas, many citrus growers observed that losses were much heavier in trees with bark lesions of psorosis. It was also observed that certain of the apparently healthy trees were killed while others under similar conditions survived. These observations suggested that some of the casualties among the apparently healthy trees were also infected with psorosis.

At the time of the freeze in January and February, 1951, accurate charts were available of 20 red grapefruit groves in which was recorded the location of healthy trees, trees with bark and leaf symptoms of psorosis, and trees with psorosis leaf symptoms alone. These records were the result of examinations made by the State Department of Agriculture in carrying out the program of budwood certification in co-operation with the Lower Rio Grande Valley Nurserymen's Assn.

Data on freeze damage was available from the 20 groves of red grapefruit that had been charted. This data showed that in many of these groves other conditions such as dormancy, pruning, cultivation, irrigation, varying temperatures, air drainage and windbreaks were major factors in determing the degree of freeze injury. Four groves were selected for study in which these factors did not appear to influence the degree of freeze injury. The data reported here is from these four charted groves, all of which were red grapefruit on sour orange rootstock and were under observation at least two years preceding the freeze.

The records show that there were 18 trees with bark symptoms of psorosis in the four groves. Only one of these trees survived the freeze. There were 36 trees showing only the leaf symptoms of psorosis of which two survived. Except for leaf symptoms, these latter trees were apparently healthy, although such trees often showed slight dwarfing and smaller sized fruit.

In contrast to the heavy losses in the psorosis-infected trees, 95 (99 percent) of the 96 psorosis-free trees in these four groves survived the freeze. These results confirm the observation of Fawcett (1948) who reports . . . "trees having infestations of scale insects or red spider, and trees attacked by gummosis, scaley bark, or other diseases are more seriously injured by freeze than adjacent healthy trees."

The observations that trees with leaf symptoms and no bark symptoms of psorosis did not survive the freeze is a possible explanation of why many apparently healthy trees failed to survive freeze injury in 1949. Such apparently healthy trees may have been infected with psorosis and more susceptible to freeze injury.

The observations on the relations of psorosis to freeze injury are further evidence of the potential benefits to be derived from the Texas inspection and registration of citrus trees and registration of nursery stock. The elimination of psorosis from nursery trees provides a more freeze-tolerant tree for future plantings.

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UNDERWRITERS RELEASE NEW FIRE PREVENTEION BOOKLET

A new farm fire prevention booklet, "Your Farm and Fire Safety", has just been published by the National Board of Fire Underwriters. It replaces the National Board's "Fire Safety on the Farm" booklet which was published in 1947.

Designed to help farmers reduce the threat of fire damage to farm buildings and property, "Your Farm and Fire Safety" is available free of charge through local fire departments, insurance agents and farm organizations.

According to the National Board of Fire Underwriters, the new 24-page booklet was published as a public service because of the many new developments made in farm mechanization and the resultant growth of new fire hazards.

"The swift advance of science and technology have brought many new fire hazards to the farm", the booklet states. "The modern farm is no longer an island of security, remote from danger. Today is has all the hazards of machine shops, factories, gasloine stations, paint shops, combined with frame buildings holding tons of hay and straw —and all these with no hydrants and several miles distance from the nearest fire department."

The booklet points out that farmers should give thought to fire safety considerations every time a building is planned, when new equipment is added, when meeting with other farmers, or when the budget is planned.

It describes means of establishing adequate water supplies, types of extinguishers to use, recommends alarm systems and urges support of local rural fire departments.

Common hazards, such as carcless smoking and misuse of electricity, as well as special hazards, such as faulty installation of power equipment, are pointed out. In addition, the farmer is urged to inspect his farm regularly for fire hazards. He is also warned about the danger from fires out of doors, and is given instructions for safe burning of rubbish and clearing of lands.

The booklet was prepared after consultations with safety experts of the U. S. Department of Agriculture, Underwriters' Laboratories Inc., the agricultural committee of the National Fire Waste Council, and farm organizations.

Single copies may be obtained free by writing to the National Board of Fire Underwriters, 85 John Street, New York 38. In the Middle West, inquiries should be sent to the National Board of Fire Underwriters, 222 West Adams Street, Chicago; and west of the Rockies, to the National Board of Fire Underwriters, 465 California Street, San Francisco.

USDA READY TO EXTEND CITRUS INSURANCE

Senator Smathers, Florida's junior senator, said recently that the Agriculture Department has agreed to extend to additional Florida counties its experimental program for insurance of citrus crops against hurricanes and frost.

The program has been in effect in Polk county for two years. Smathers wants to have it broadened to embrace all citrus growers in the state.

He conferred with Leslie Schock of the Federal Crop Insurance Corporation and Ralph Botts of the Bureau of Agricultural Economics.

Questioned by newsmen Smathers said the department officials agreed to let growers in an unspecified number of other Florida counties participate in the insurance program.

The federal insurance will be provided only in counties in which 200 growers, or at least one-third of the growers, sign up to obtain the coverage. Maximum protection is $150 an acre and the premium is 7 per cent.

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CITRUS BLACK FLY HAS BEEN HALTED

Under te above heading, but with a caution to readers to "keep their fingers crossed," Texas Farming and Citriculture prints the following statement in regard to the Citrus Black Fly which has been doing vast damage to Mexican citrus groves:

The Black Fly, which was on the march through Mexican citrus orchards towards the border and the Texas citrus industry a few years ago, is being held along a line roughly 30 miles below the Rio Grande river, according to N. O. Berry of the U. S. Bureau of Entomology and Quarantine office in Harlingen.

In Monterrey where infestations were very general a few years ago with upward of 300 infestations, inspectors have been able to find only one or two at the present time.

Matamoros, just across the river from Brownsville, has not had any new infestations since the discovery of flies there two years ago. An infestation at Sabinas Hidalgo between Monterrey and Laredo has been cleaned out.

Montemorelos, a big citrus growing area between Monterrey and Victoria, has not had any black flies reported within a year but Victoria itself has had several infestations.

Below Victoria at El Mante, the fly is well established but U. S. and Mexican authorities hope to keep the pest contained in the present area of infestation.

"I believe we can keep the fly out of the United States by diligent inspections and thorough spraying," Berry said. The United States is furnishing the inspection personnel and transportation while the Mexican authorities do the spraying. The Mexicans also operate road stations to prevent leaves and other material capable of harboring the insect from being taken into areas free from infestations.

Similar methods are being employed in Pacific Coast areas of Mexico which are close to California and Arizona citrus developments, Berry said.

In the Texas citrus area, spray rigs and oil sprays are held on a standby basis and inspectors at international crossing points keep a watch for dangerous material.

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RESPECT AND CARE NEEDED IN USING INSECTICIDES ON CROPS

A "healthy respect" for insecticides and care in handling them are recommended by Dr. John W. Wilson, entomologist with the Central Florida Experiment Station, for avoiding poisoning in using these chemicals for controlling crop pests.

"When the necessary care is exercised, there is little danger of accidental poisoning in using insecticides," he says. For safe, satisfactory use of insecticides on crops, he offers these suggestions:

Keep in mind the poisonous character of the chemicals being used.

Read the label on the container and become familiar with the nature of the insecticide, the insects it will control, and the proper amounts.

Avoid breathing dust of wettable powder and dust formulations and mist of spray.

If liquid or dust formulations accidentally come in contact with any part of the body, wash the affected part thoroughly with water at once. Remove contaminated clothing promptly.

Bathe and change into fresh clothing at the end of a day or part of a day of applying insecticide.

If symptoms of poisoning develop, call a doctor at once.

Use insecticide at recommended dosage and do not make more applications than are necessary.

Burn or bury deeply empty insecticide containers.

Discontinue insecticide applications two weeks before harvest.

LAKE 4-H NURSERIES FOSTER CITRUS BUD CERTIFICATION PLAN

4-H club boys in Lake County are helping oldsters in the citrus industry carry the ball on Florida's newly-endorsed citrus budwood certification program.

The certification program, proposed and adopted at the 1951 annual Citrus Institute at Camp McQuarrie, is designed to prevent the spread of bud-transmissable virus diseases of citrus, such as psorosis and gummosis.

Under the direction of Jack T. McCown, assistant Lake County agent, 4-H boys' clubs in Mt. Dora, Eustis, Umatilla and Clermont are planting citrus nurseries for certification as their part in getting the program launched with full steam ahead.

"Our aim in establishing 4-H certified nurseries," McCown stated, "is to encourage nurserymen and growers to produce disease-free nursery trees for citrus groves and to provide a supply of such trees for regular and prospective growers."

Classified Ads

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Hints For the Busy Housewife

HOME DEMONSTRATION SPECIALISTS, Tallahassee

By Alice L. Cromartie
Food Conservation Specialist

Frozen Puree

This is an excellent way to use guava pulp. Press through a strainer or food mill to remove seeds. Sweeten to taste, usually 3 cups pulp to 1 of sugar, unless you are using very sweet guavas, then reduce sugar to 2/3 cup to 3 cups pulp. Lime juice added makes an interesting flavor. Pack in air-tight containers leaving ½ inch head space, label and freeze at zero Fahrenheit. This frozen puree can do anything and go anywhere the canned puree does—and you'll enjoy it, too.

Guava Juice

You'll surely want to put some juice up from this season's crop. It's grand in punches and it does well in Velva Fruit, too. Wash and slice about 4 dozen guavas into a large container. Add 2 to 3 cups of water and boil 20 minutes. Strain through a jelly bag or flannel. To can, reheat to boiling and pour at once into sterile jars. Seal and process in a simmering water bath for 5 minutes. The addition of sugar before canning is not recommended if juice is to be used for jelly making. If juice is to be used in beverages or desserts the adition of ½ cup of sugar to 4 cups of juice is recommended.

Guava Velva

Ingredients: 3 cups guava juice or puree, 1 cup sugar, 1 tablespoon lemon juice, and 1 tablespoon plain gelatin.

Soften gelatin in small amount of water. Place over hot water and melt. Add sugar to juice and lemon juice and stir well. Add melted gelatin and stir well to mix. Pour into ice cream freezer container and pack freezer with ice and salt. Churn 15 to 20 minutes. Pack if desired for 1 hour or serve immediately. Velva may be packed in freezer cartons and frozen at zero Fahrenheit for several months. Texture will not be as good as freshly churned.

COUNTY AGENT NAMED, ASSISTANT APPOINTED

W. Harper Kendrick has been named county agent in Manatee, succeeding Ed L. Ayers, who recently became commissioner for the State Plant Board. His appointment was made by H. G. Clayton, director of the Agricultural Extension Service, and the county commissioners.

Director Clayton also announces the appointment of Neal B. Whitmer as assistant agent in Hillsborough. He will work primarily with poultry farmers of Hillsborough, under the direction of County Agent Alec White.

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